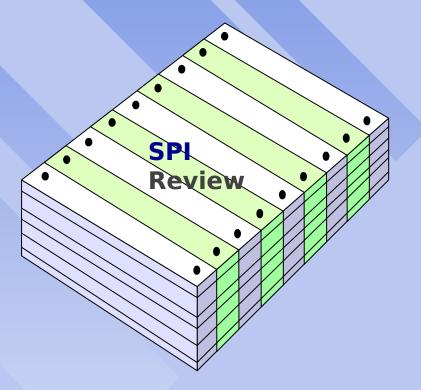**Welcome to the**
System Modification Scenario
Project Management
Training Class

Course Overview

- Review SPI, CMM, and SMS

- Introduction to Project Management (PM)

- PM and the CMM

- PM and FSO Policy

- Identification of PM tasks, subtasks, and procedures as outlined in the SMS

SECTION 1

SPI
Review

SPI, CMM, SMS Review

- The student will answer questions about:
  - Software Process Improvement (SPI)
  - Capability Maturity Model (CMM)
  - System Modification Scenario (SMS)
- The student will identify:
  - The Key Process Areas of CMM Level 2
  - The outline levels of the SMS
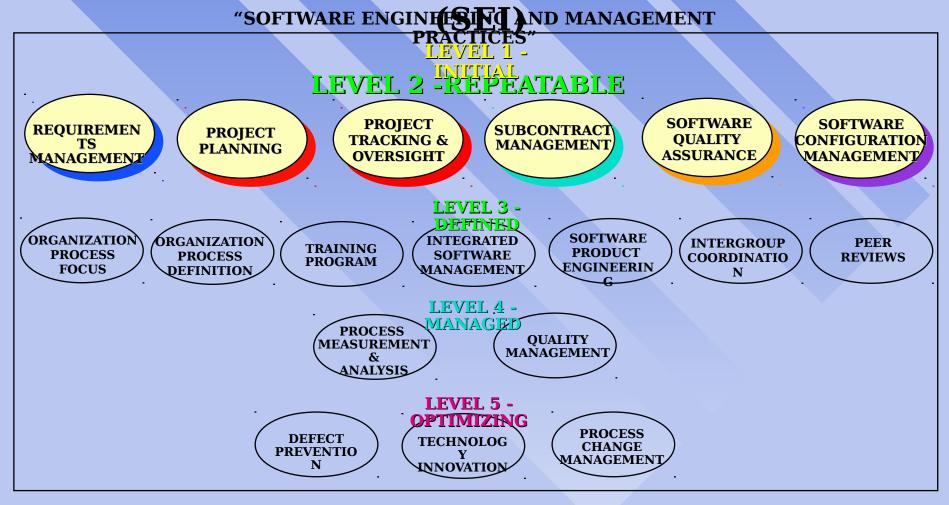
Software Process Improvement (SPI)

- Effort to Improve Software Process
- System of:
  » Tasks
  » Tools
  » Standards, Methods, Practices
- Applicable Throughout Software Life Cycle

Capability Maturity Model (CMM)

- ■ A FRAMEWORK FOR EFFECTIVE SOFTWARE PROCESSES
  - Identifies:
    - » Maturity Levels
    - » Key Process Areas
    - » Common Features

KEY PROCESS AREAS (KPAs)
As Defined by
SOFTWARE ENGINEERING INSTITUTE (SEI)

"SOFTWARE ENGINEERING AND MANAGEMENT PRACTICES"

LEVEL 1 - INITIAL

LEVEL 2 -REPEATABLE

- REQUIREMENTS MANAGEMENT
- PROJECT PLANNING
- PROJECT TRACKING & OVERSIGHT
- SUBCONTRACT MANAGEMENT
- SOFTWARE QUALITY ASSURANCE
- SOFTWARE CONFIGURATION MANAGEMENT

LEVEL 3 - DEFINED

- ORGANIZATION PROCESS FOCUS
- ORGANIZATION PROCESS DEFINITION
- TRAINING PROGRAM
- INTEGRATED SOFTWARE MANAGEMENT
- SOFTWARE PRODUCT ENGINEERING
- INTERGROUP COORDINATION
- PEER REVIEWS

LEVEL 4 - MANAGED

- PROCESS MEASUREMENT & ANALYSIS
- QUALITY MANAGEMENT

LEVEL 5 - OPTIMIZING

- DEFECT PREVENTION
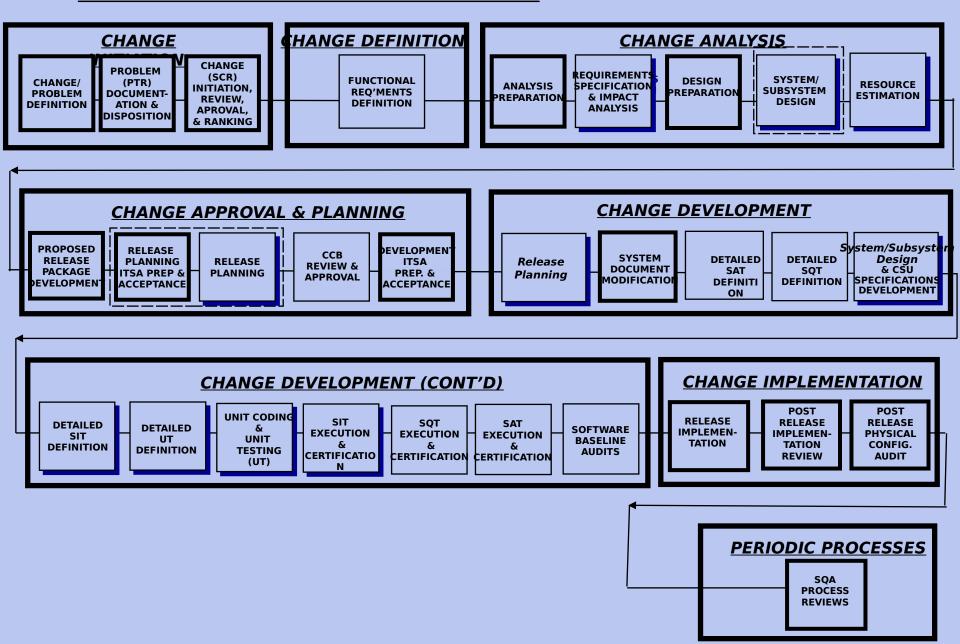- TECHNOLOGY INNOVATION
- PROCESS CHANGE MANAGEMENT

System Modification Scenario (SMS)

- One part of the Software Process Architecture

- Focuses on routine system modification

- Provides:
    » Process definition
    » Description
    » Documentation

SOFTWARE PROCESS ARCHITECTURE
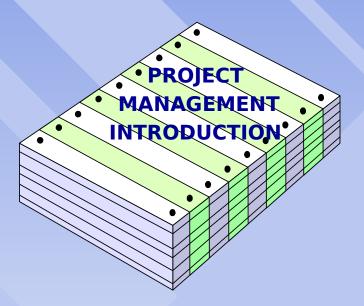## SYSTEM MODIFICATION SCENARIO - PHASES & SUBPHASES

CHANGE INITIATION

- CHANGE/ PROBLEM DEFINITION
- PROBLEM (PTR) DOCUMENT-ATION & DISPOSITION
- CHANGE (SCR) INITIATION, REVIEW, APROVAL, & RANKING

CHANGE DEFINITION

- FUNCTIONAL REQ'MENTS DEFINITION

CHANGE ANALYSIS

- ANALYSIS PREPARATION
- REQUIREMENTS SPECIFICATION & IMPACT ANALYSIS
- DESIGN PREPARATION
- SYSTEM/ SUBSYSTEM DESIGN
- RESOURCE ESTIMATION

CHANGE APPROVAL & PLANNING

- PROPOSED RELEASE PACKAGE DEVELOPMENT
- RELEASE PLANNING ITSA PREP & ACCEPTANCE
- RELEASE PLANNING
- CCB REVIEW & APPROVAL
- DEVELOPMENT ITSA PREP. & ACCEPTANCE

CHANGE DEVELOPMENT

- Release Planning
- SYSTEM DOCUMENT MODIFICATION
- DETAILED SAT DEFINITION
- DETAILED SQT DEFINITION
- System/Subsystem Design & CSU SPECIFICATIONS DEVELOPMENT

CHANGE DEVELOPMENT (CONT'D)

- DETAILED SIT DEFINITION
- DETAILED UT DEFINITION
- UNIT CODING & UNIT TESTING (UT)
- SIT EXECUTION & CERTIFICATION
- SQT EXECUTION & CERTIFICATION
- SAT EXECUTION & CERTIFICATION
- SOFTWARE BASELINE AUDITS

CHANGE IMPLEMENTATION

- RELEASE IMPLEMEN-TATION
- POST RELEASE IMPLEMEN-TATION REVIEW
- POST RELEASE PHYSICAL CONFIG. AUDIT

PERIODIC PROCESSES

- SQA PROCESS REVIEWS

Performance Check

**Open the Performance Check Package to
SPI, CMM, SMS Review
and answer the questions.**

SECTION 2

**PROJECT
MANAGEMENT
INTRODUCTION**

PM Introduction

■ Objectives:

- Define Project Management (PM) and
  its goals

- Review CMM's PM Common Features

- Identify PM roles and responsibilities

- Review the FSO's PM Policy

PM Introduction

■ What is PM?

- Establishing plans for:

  » Performing software engineer[...]

  » Managing the project

- Providing adequate visibility into project's actual progress

- Taking action to change the project's schedule, resources, scope, or quality

PM Introduction

■ What are some of the functions performed?
  - Developing estimates
  - Establishing commitments
  - Defining the plan
  - Tracking, reviewing, and reporting accomplishments
  - Adjusting the plans

PM Introduction

■ CMM's PM Common Features:

- Goals

- Commitment to Perform

- Ability to Perform

- Activities to Perform

- Measurement and Analysis

- Verifying Implementation

PM Introduction

Goals for S/W Project Planning (SPP):

- Software estimates are documented for use in planning and tracking the software project

- Software project activities and commitments are planned and documented

- Affected groups and individuals agree to their commitments related to the software project

PM Introduction

COMMITMENT TO PERFORM:

- The project software manage
  - Is responsible for:
    - » Negotiating commitments
    - » Developing the project's SDP
    - » Defining the project's software activities
  - Follows a written organizational policy for planning and managing a software project

PM Introduction

ABILITY TO PERFORM (SPP):

- Statement of work exists for the project
- Responsibilities and activities are assigned
- Resources and funding are provided
- Training is received in estimating and planning

PM Introduction

MEASUREMENT AND ANALYSIS (SPP):

- Determines the status of:
    - software planning
    - tracking
    - oversight activities

PM Introduction

VERIFYING IMPLEMENTATION (SPP):

- PM reviews the activities for SPP with:
  - Senior management (periodic basis)
  - All affected groups (periodic and event-driven basis)

- SQA reviews and/or audits (per SQAP):
  - Activities
  - Work products

PM Introduction - Policy

PURPOSE:

- Establishes Software Project Management responsibilities and processes for the modernization or modification of AISs

- Addresses a standard set of processes for:
  - Estimation
  - Planning
  - Tracking
  - Oversight activities

PM Introduction - Policy

SCOPE:

- Applicable to all Defense Finance and Accounting Service (DFAS) Financial Systems Activities (FSA)

PM Introduction - Policy

RESPONSIBILITIES IDENTIFIED FOR:

- FSO Director
- FSA/DSE Directors
- Project Managers

Performance Check
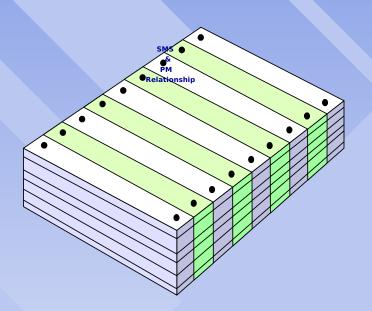
**Open the Performance Check Package to
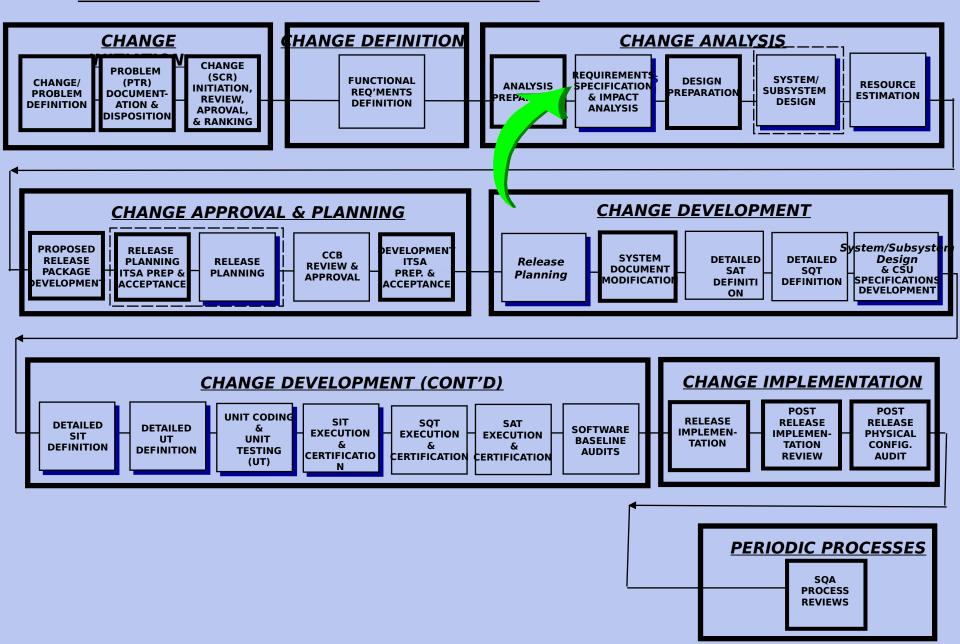Project Management Introduction
and answer the questions.**

SECTION 3

SMS
&
PM
Relationship

SMS and PM Relationship

Objective:

- Use the SMS to perform:
  - PM tasks
  - Subtasks
  - Procedures

SOFTWARE PROCESS ARCHITECTURE
SYSTEM MODIFICATION SCENARIO - PHASES & SUBPHASES

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- CHANGE (SCR) INITIATION, REVIEW, APROVAL, & RANKING

CHANGE DEFINITION

- FUNCTIONAL REQ'MENTS DEFINITION

CHANGE ANALYSIS

- ANALYSIS PREPAR...
- REQUIREMENTS SPECIFICATION & IMPACT ANALYSIS
- DESIGN PREPARATION
- SYSTEM/ SUBSYSTEM DESIGN
- RESOURCE ESTIMATION

CHANGE APPROVAL & PLANNING

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- RELEASE PLANNING
- CCB REVIEW & APPROVAL
- DEVELOPMENT ITSA PREP. & ACCEPTANCE

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CHANGE DEVELOPMENT (CONT'D)

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- DETAILED UT DEFINITION
- UNIT CODING & UNIT TESTING (UT)
- SIT EXECUTION & CERTIFICATION
- SQT EXECUTION & CERTIFICATION
- SAT EXECUTION & CERTIFICATION
- SOFTWARE BASELINE AUDITS

CHANGE IMPLEMENTATION

- RELEASE IMPLEMEN-TATION
- POST RELEASE IMPLEMEN-TATION REVIEW
- POST RELEASE PHYSICAL CONFIG. AUDIT

PERIODIC PROCESSES

- SQA PROCESS REVIEWS

1 TASK

CHANGE ANALYSIS PHASE

Requirements
Specifications
and
Impact
Analysis
Subphase

Detailed Impact Analysis

References/Standards

ANSI/IEEE Std 1042-1987
DFAS 8000.1-R
Mil Std 973

Input (s):

FSA-Analyzed SCR

System Documentation

System Specification

Output (s):

FSA-Impacted SCR

Detailed Impact Analysis Task (1 of 1)

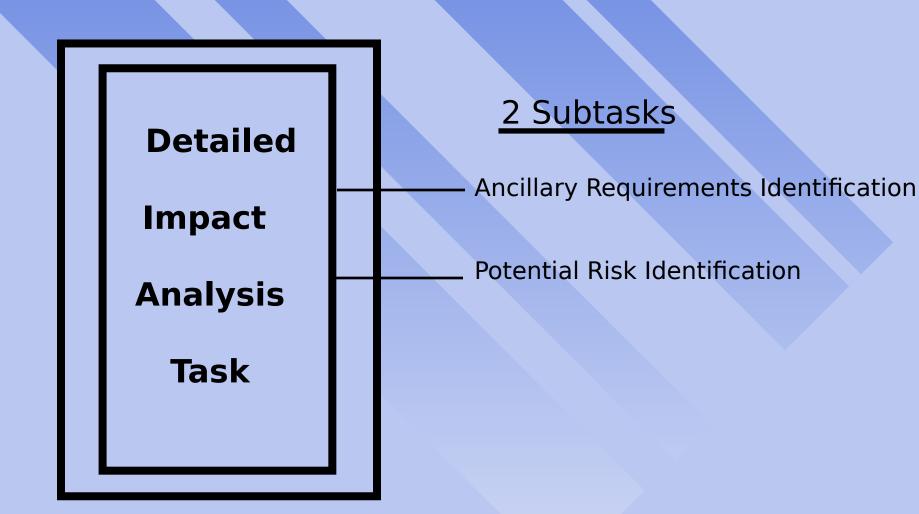**PURPOSE: To identify the impact on the system components due to the change in requirements.**

Skill(s):

Computer Expertise

Detailed

Impact

Analysis

Task

2 Subtasks

Ancillary Requirements Identification

Potential Risk Identification

Detailed Impact Analysis Task

Ancillary Requirements Identification Subtask 1 of 2

- Are associated with a change request
- Are special requirements
- Require the FSA to incur costs beyond those normally associated with completing a change request
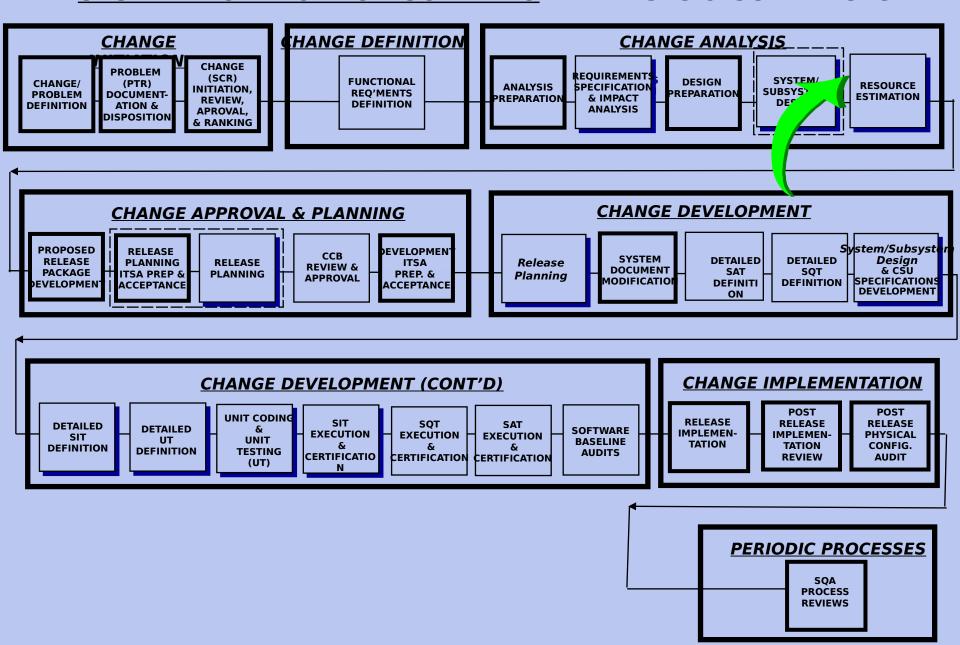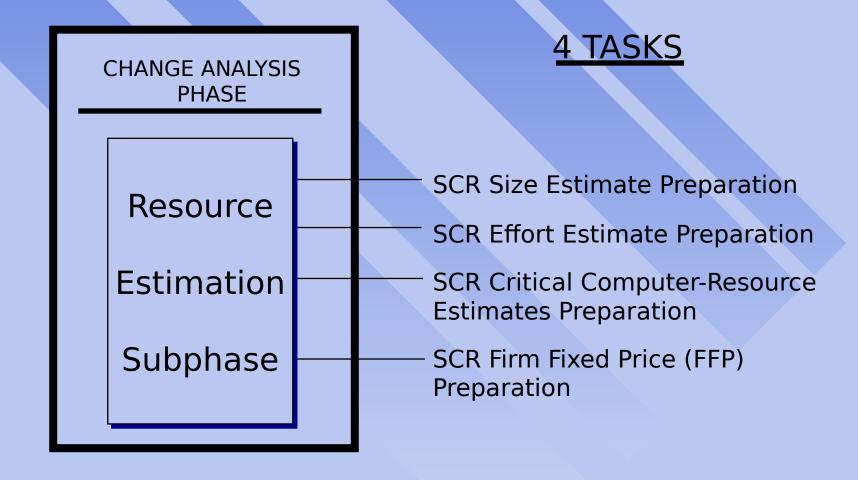
Detailed Impact Analysis Task

Potential Risk Identification Subtask (2 of 2)

- Associated with the changed requirements

- Relate directly to the projected costs or staff hours

- Are identified and documented for use in the Configuration Control Board and for Release Planning

SOFTWARE PROCESS ARCHITECTURE
SYSTEM MODIFICATION SCENARIO - PHASES & SUBPHASES

CHANGE INITIATION

CHANGE/ PROBLEM DEFINITION	PROBLEM (PTR) DOCUMENT-ATION & DISPOSITION	CHANGE (SCR) INITIATION, REVIEW, APROVAL, & RANKING

CHANGE DEFINITION

FUNCTIONAL REQ'MENTS DEFINITION

CHANGE ANALYSIS

ANALYSIS PREPARATION	REQUIREMENTS SPECIFICATION & IMPACT ANALYSIS	DESIGN PREPARATION	SYSTEM/ SUBSYST DES	RESOURCE ESTIMATION

CHANGE APPROVAL & PLANNING

PROPOSED RELEASE PACKAGE DEVELOPMENT	RELEASE PLANNING ITSA PREP & ACCEPTANCE	RELEASE PLANNING	CCB REVIEW & APPROVAL	DEVELOPMENT ITSA PREP. & ACCEPTANCE

CHANGE DEVELOPMENT

Release Planning	SYSTEM DOCUMENT MODIFICATION	DETAILED SAT DEFINITION	DETAILED SQT DEFINITION	System/Subsystem Design & CSU SPECIFICATIONS DEVELOPMENT

CHANGE DEVELOPMENT (CONT'D)

DETAILED SIT DEFINITION	DETAILED UT DEFINITION	UNIT CODING & UNIT TESTING (UT)	SIT EXECUTION & CERTIFICATION	SQT EXECUTION & CERTIFICATION	SAT EXECUTION & CERTIFICATION	SOFTWARE BASELINE AUDITS

CHANGE IMPLEMENTATION

RELEASE IMPLEMEN-TATION	POST RELEASE IMPLEMEN-TATION REVIEW	POST RELEASE PHYSICAL CONFIG. AUDIT

PERIODIC PROCESSES

SQA PROCESS REVIEWS

4 TASKS

CHANGE ANALYSIS PHASE

Resource Estimation Subphase

- SCR Size Estimate Preparation
- SCR Effort Estimate Preparation
- SCR Critical Computer-Resource Estimates Preparation
- SCR Firm Fixed Price (FFP) Preparation

References/Standards

IFPUG Counting Practices Manual

Input (s):

Output (s):

FSA-Impacted SCR →

System Documentation →

System/Subsystem Metrics →

SCR Size Estimate Preparation Task (1 of 4)
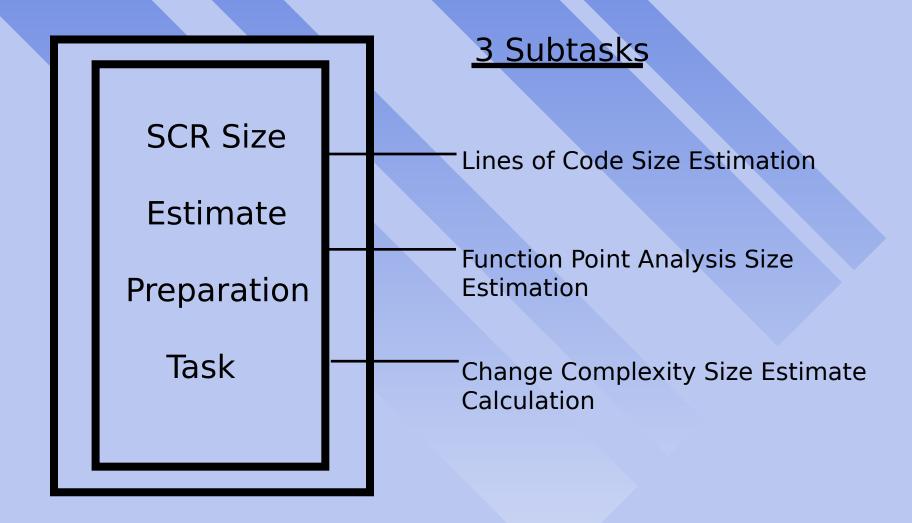
PURPOSE: Produce an estimate for the size of the change to the system's components due to the change in requirements.

SCR Size Estimates →

Skill(s):

Computer Expertise
Project Management

3 Subtasks

SCR Size

Estimate

Preparation

Task

Lines of Code Size Estimation

Function Point Analysis Size Estimation

Change Complexity Size Estimate Calculation

Performance Check

**Open the Performance Check Package to
SCR Size Estimate Preparation
and answer the questions.**

Input (s):

FSA-Impacted SCR

SCR Size Estimates

System Documentation

System/Subsystem Metrics

SCR Effort Estimate Preparation Task (2 of 4)

PURPOSE: Produce an effort estimation, which will be utilized by the Configuration Control Board to determine the initial cost, schedule and release date of the project.
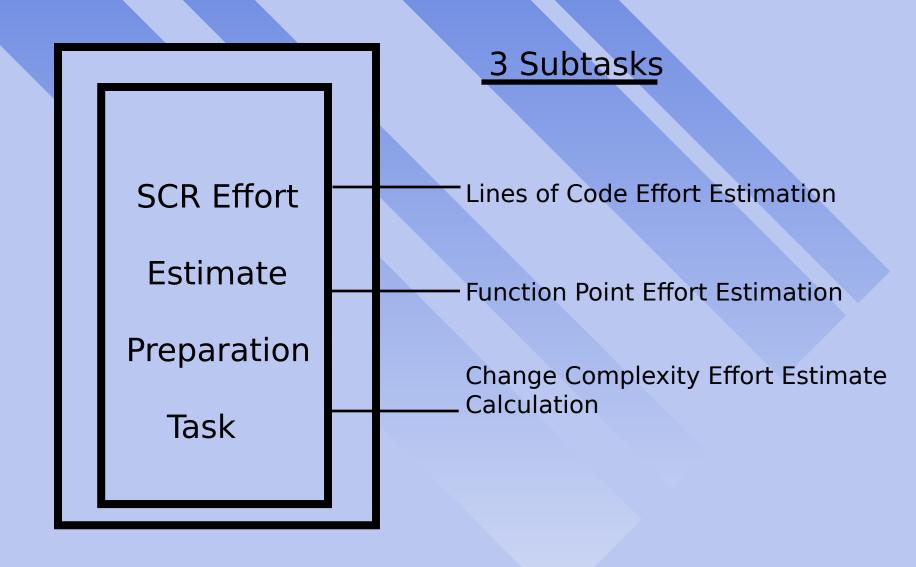
Output (s):

Job Time Worksheet

SCR Effort Estimates

Skill(s)

Computer Expertise
Project Management

3 Subtasks

SCR Effort

Estimate

Preparation

Task

Lines of Code Effort Estimation

Function Point Effort Estimation

Change Complexity Effort Estimate Calculation

Performance Check

**Open the Performance Check Package to
SCR Effort Estimate Preparation
and answer the questions.**

Input (s):

FSA-Impacted SCR

System Documentation

System/Subsystem Metrics

SCR Critical Computer Resource Estimates Preparation Task (3 of 4)
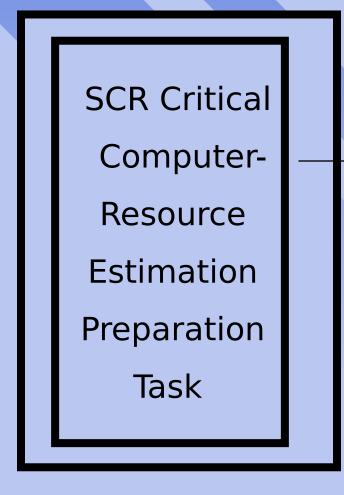
Purpose: To produce, record and coordinate critical computer resource estimates required to complete the requested change.

Output (s):

SCR Critical Computer Resources Estimates

Skill(s):

Computer Expertise

**Project Management
Telecommunications Specialist Expertise**

1 Subtask

SCR Critical

Computer-

Resource

Estimation

Preparation

Task

Critical Computer Resources
Estimates Calculation

SCR CCR Estimates Prep. Task

CCR Estimates Calculation Subtask (1 of 1)

- Calculate CCR estimates
- Document CCR estimates
- Coordinate CCR estimates

Performance Check

**Open the Performance Check Package to
SCR Critical Computer-Resource Estimates Preparation
Task
and follow the directions.**

References/Standards

Software Subcontract Management Scenario, if appropriate

Input (s):

FSA-Impacted SCR

SCR Effort Estimates

FSO Hourly Rate

Critical Computer Resources Estimates *

Ancillary Requirement Cost *

SCR Firm Fixed Price Preparation Task (4 of 4)

Purpose: To produce, record and coordinate a Firm Fixed Price required to satisfy all requirements of the SCR

Output (s):

Estimated SCRs
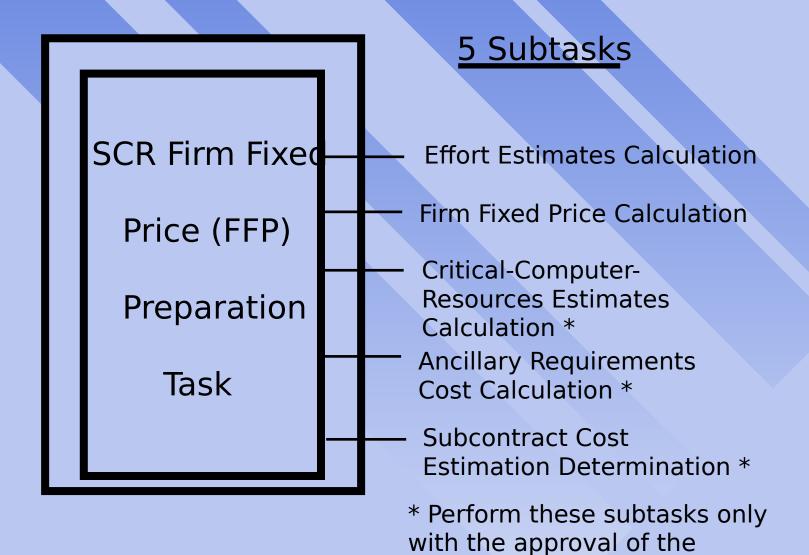
Firm Fixed Price Estimate Summary Sheet

* These are used only with approval by the business manager

Skill(s):

Computer Expertise

Project Management

Subcontract Management, if appropriate

5 Subtasks

SCR Firm Fixed Price (FFP) Preparation Task

Effort Estimates Calculation

Firm Fixed Price Calculation

Critical-Computer-Resources Estimates Calculation *

Ancillary Requirements Cost Calculation *

Subcontract Cost Estimation Determination *

* Perform these subtasks only with the approval of the business manager.

SCR FFP Preparation Task

Effort Estimates Calculation Subtask (1 of 5)

- Calculate the costs associated with the effort estimates

- Multiply the effort estimate by the established FSO hourly rate for "direct" labor

SCR FFP Preparation Task

CCR Estimates Calculation Subtask * (2 of 5)

- Determine the cost associated with each CCR needs estimate.

*Perform this subtask only with the approval of the business manager.

SCR FFP Preparation Task

Ancillary Requirements Cost Calculation Subtask * (3 of 5)

- Determine the cost of each ancillary requirement and calculate the cumulative cost.

*Perform this subtask only with the approval of the business manager.

SCR FFP Preparation Task

Subcontract Cost Estimation Determination Subtask * (4 of 5)

- Determine estimated costs of subcontracted work associated with the SCR

*Perform this subtask only with the approval of the business manager.

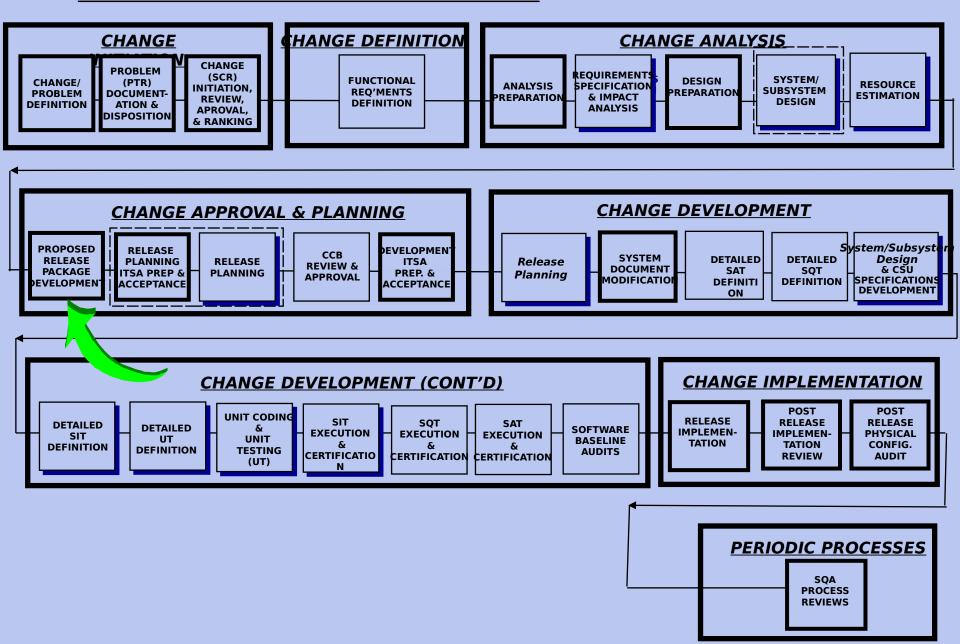# SCR FFP Preparation Task
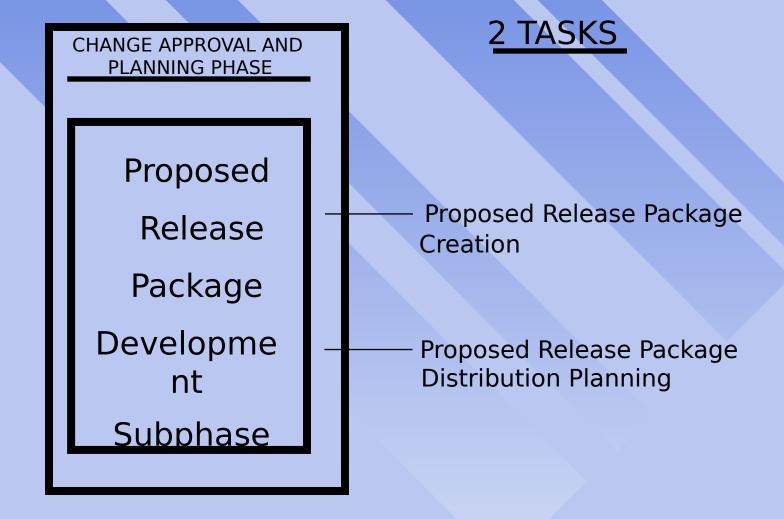
Firm Fixed Price Calculation Subtask (5 of 5)

- Produce the FFP for the SCR based on sum of:
  - Size and effort
  - CCRs
  - Ancillary Requirements
  - Subcontractor Cost Estimates

Performance Check

**Open the Performance Check Package to
SCR Firm Fixed Price Preparation Task
and follow the directions.**

SOFTWARE PROCESS ARCHITECTURE
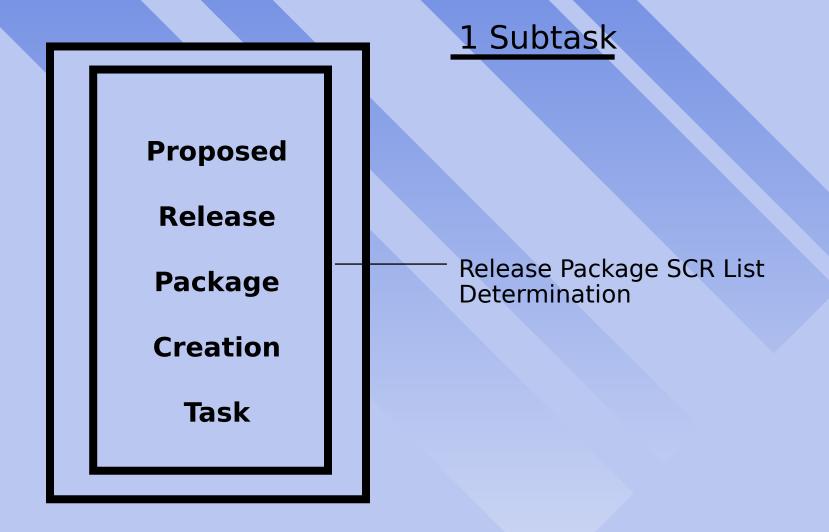## SYSTEM MODIFICATION SCENARIO - PHASES & SUBPHASES

CHANGE INITIATION

- CHANGE/ PROBLEM DEFINITION
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- CHANGE (SCR) INITIATION, REVIEW, APROVAL, & RANKING

CHANGE DEFINITION

- FUNCTIONAL REQ'MENTS DEFINITION

CHANGE ANALYSIS

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CHANGE APPROVAL & PLANNING

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CHANGE DEVELOPMENT

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CHANGE IMPLEMENTATION

- RELEASE IMPLEMEN-TATION
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PERIODIC PROCESSES

- SQA PROCESS REVIEWS

2 TASKS

CHANGE APPROVAL AND
PLANNING PHASE

Proposed

Release

Package

Developme
nt

Subphase

Proposed Release Package
Creation

Proposed Release Package
Distribution Planning

Input (s):

Estimated SCRs →

**Proposed Release
Package Creation Task
(1 of 2)**

**Purpose: To identify work level
available and effort to support
customer requirements and to
include SCRs projected for
completion in a scheduled
release**

Output (s):

**Proposed Release
Package** →

1 Subtask

Proposed

Release

Package

Creation

Task

Release Package SCR List
Determination

Proposed Release Package Creation Task

Release Package SCR List Determination Subtask (1 of 1)

- Develop a <u>Proposed</u> list of SCR's to be included in a release

- Reflect customer and FSA priorities

Performance Check

**Open the Performance Check Package to
Proposed Release Package Creation Task
and follow the directions.**

References/Standards:

Systems Management Policy - SM-05

Input (s):

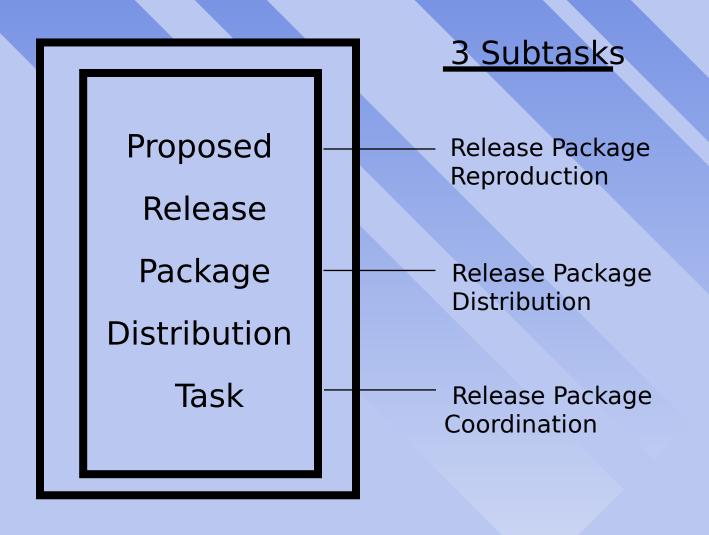## Output (s):

Proposed/Approved Release Package

Proposed Release Package Distribution Task (2 of 2)

Purpose: To reproduce the release package and distribute it to all appropriate groups and individuals for review
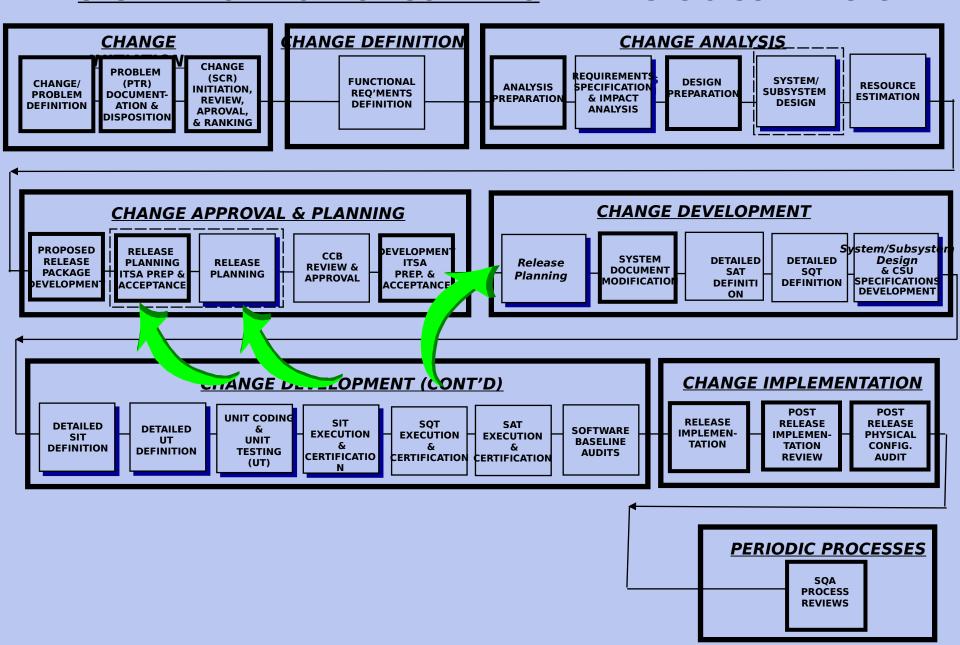
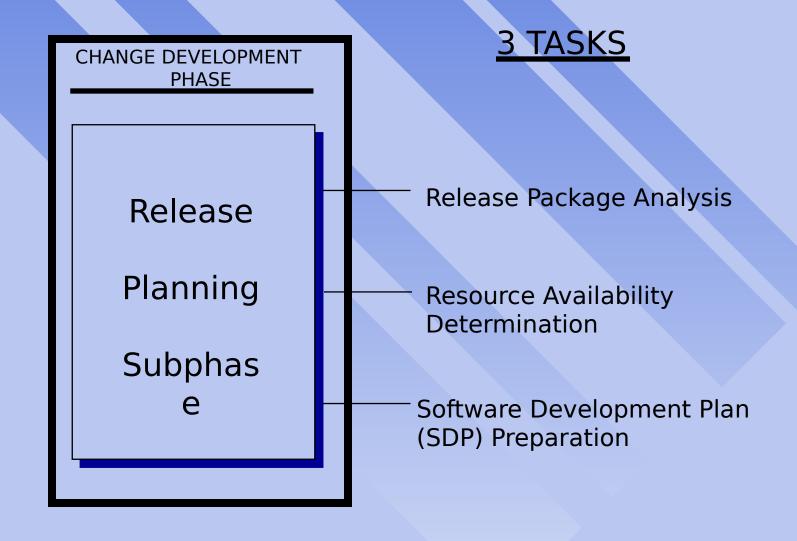**Proposed/Approved Release Package**

Proposed Release Package Distribution Task

3 Subtasks

Proposed

Release

Package

Distribution

Task

—— Release Package Reproduction

—— Release Package Distribution

—— Release Package Coordination

SOFTWARE PROCESS ARCHITECTURE
SYSTEM MODIFICATION SCENARIO - PHASES & SUBPHASES

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PERIODIC PROCESSES

- SQA PROCESS REVIEWS

3 TASKS

CHANGE DEVELOPMENT PHASE

Release

Planning

Subphase

Release Package Analysis

Resource Availability Determination

Software Development Plan (SDP) Preparation

<u>References/Standa</u>rds:

**Software Subcontract Management Scenario
DFAS Regulation 8000.1-R**

<u>Input (s)</u>:

FSA-Estimated SCR

Funding Documents, if available

Proposed/Approved Release Package

Release Package Analysis Task (1 of 3)

Purpose: To analyze release package to identify work required to satisfy release requirements and to begin preparation of the Software Development Plan

<u>Output (s)</u>:

Release Ancillary Requirements Consolidation

Release Critical Computer Resource Consolidation
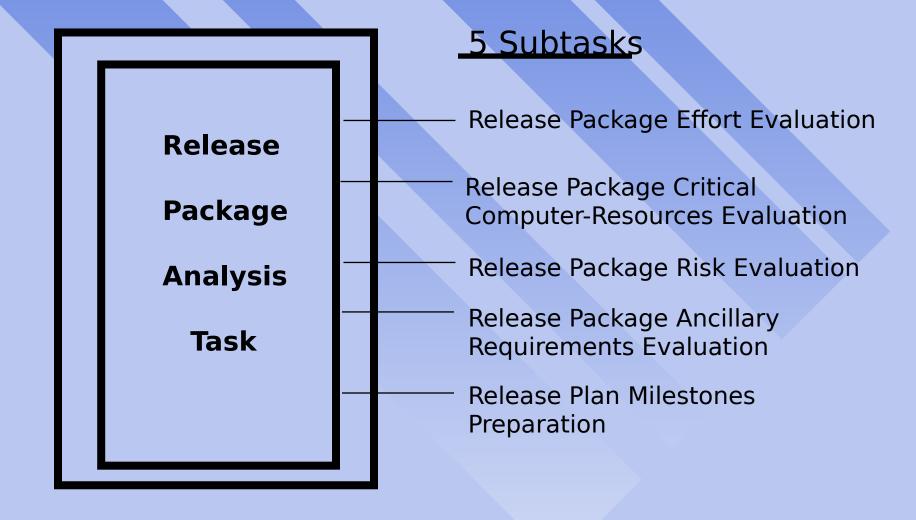
Release Planning Milestone

Release Risk Consolidation

Release Staff Hours Consolidation

<u>Skill(s)</u> :

**Computer Expertise
Project Management**

5 Subtasks

Release

Package

Analysis

Task

Release Package Effort Evaluation

Release Package Critical
Computer-Resources Evaluation

Release Package Risk Evaluation

Release Package Ancillary
Requirements Evaluation

Release Plan Milestones
Preparation

Release Package Analysis Task

Release Package Effort Evaluation Subtask (1 of 5)

- Total the effort estimates for each SCR

- Use list of direct labor categories in SMS

- Create schedule and billing

Release Package Analysis Task

Release Package CCR Evaluation Subtask (2 of 5)

- Total the critical computer resources for each SCR

- This total may only be utilized with the approval of the business manager

Release Package Analysis Task

Release Package Risk Evaluation Subtask (3 of 5)

- Identify cost, resource, schedule, and technical risks associated with:
    - Design

    - Programming

    - Testing

    - Documentation

    - Implementation

Release Package Analysis Task

Release Package Ancillary Requirements Evaluation

Subtask (4 of 5)

- Identify ancillary requirements the release package

Release Package Analysis Task

Release Plan Milestones Preparation Subtask (5 of 5)

- Consists of:
  - Preparing a plan of action and milestones used to develop SDP
  - Reviewing and modifying the SQAP
  - Reviewing and modifying the SCMP
  - Reviewing and modifying plans associated with the release, e.g., - test plans.

Performance Check

**Open the Performance Check Package to
Release Package Analysis Task
and follow the directions and answer the questions.**

Input (s):

Calendar

FSA Staffing Level

Implementation Date

Master Labor Agreement

Resource Non-Availability Schedules

Output (s):

Resource Availability Determination Task (2 of 3)

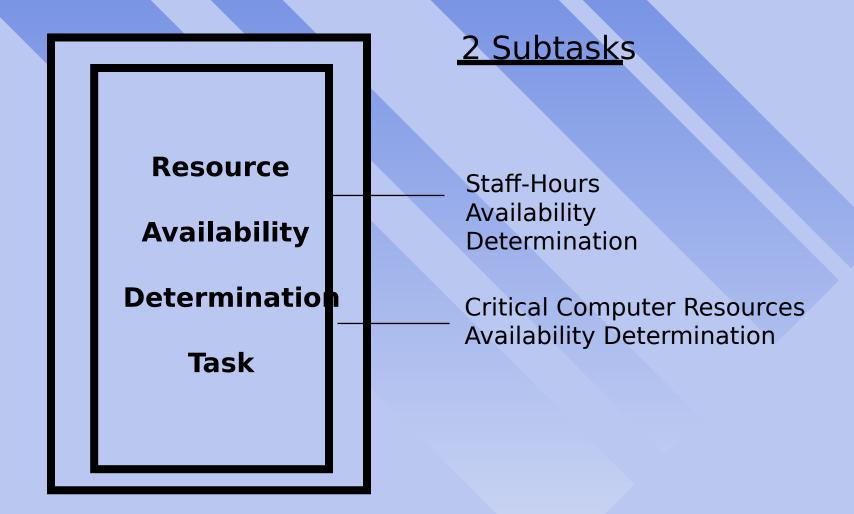**Purpose: To determine the availability of resources to satisfy the** direct labor **requirements of the release**

Critical Computer-Resources Availability Determination

Staff Hours Availability Determination

Skill(s) :

**Computer Expertise
Project Management**

2 Subtasks

Resource Availability Determination Task

Staff-Hours Availability Determination

Critical Computer Resources Availability Determination

Resource Availability Determination Task

Staff-Hours Availability Determination Subtask (1 of 2)

- Analyze staffing patterns and availability during the time frame for the scheduled release

- Determine staff-hours availability for carrying out the requirements of the release package

- Categories are same as those covered in the Release Package Analysis Task

Resource Availability Determination Task

CCR Availability Determination Subtask (2 of 2)

- Analyze CCR availability during the time frame for the scheduled release

- Determine CCR availability for carrying out the requirements of the release package

- Categories are same as those covered in the Release Package Analysis Task

Performance Check

**Open the Performance Check Package to
Resource Availability Determination Task
and follow the directions.**

Input (s):

Proposed/Approved Release Package

Modified Software Configuration Management Plan

Modified Software Quality Assurance Plan

Release Staff Hours Evaluation

Release Ancillary Requirements Review

Release Critical Computer-Resources Evaluation

Release Risk Review

Output (s):

Software Development Plan

Software Development Plan (SDP) Preparation Task (3 of 3)

Purpose: To develop a Software Development Plan which identifies the tasks and establishes milestones for the release

Skill(s):

**Computer Expertise
Project Management**

Input (s)

Output (s):

Release Planning Milestones

Modified Test and Evaluation Master Plan

Software Integration Test Plan

Software Acceptance Test Plan
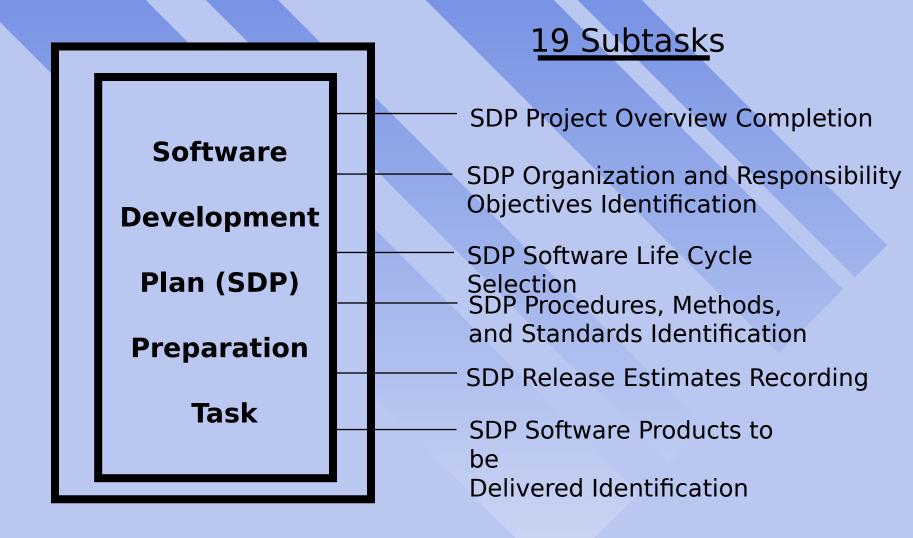
Software Qualification Test Plan
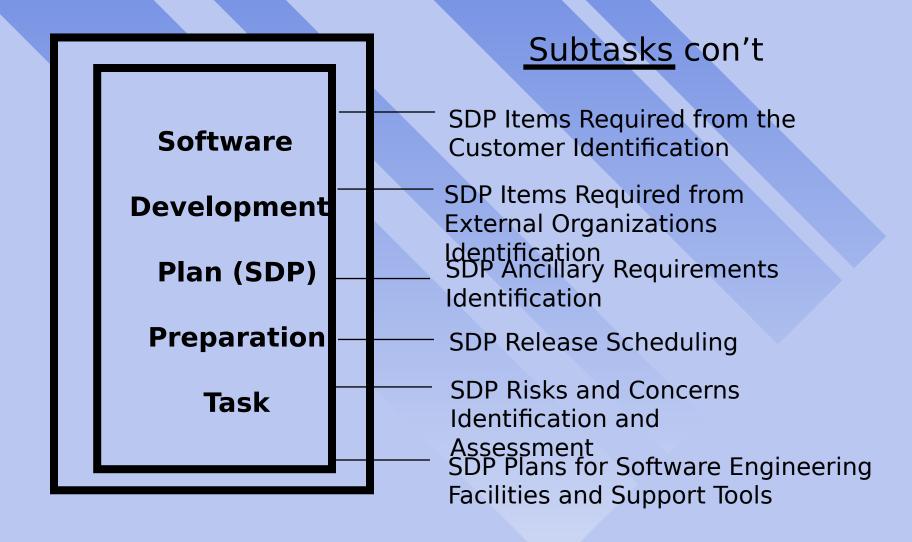
Statement of Work Package

Software Development Plan (SDP) Preparation Task Con't

Software Development Plan

Skill(s) :

**Computer Expertise
Project Management**

19 Subtasks

Software

Development

Plan (SDP)

Preparation

Task

SDP Project Overview Completion

SDP Organization and Responsibility
Objectives Identification

SDP Software Life Cycle
Selection

SDP Procedures, Methods,
and Standards Identification

SDP Release Estimates Recording

SDP Software Products to
be
Delivered Identification

Subtasks con't

Software

Development

Plan (SDP)

Preparation

Task

SDP Items Required from the Customer Identification

SDP Items Required from External Organizations Identification

SDP Ancillary Requirements Identification

SDP Release Scheduling

SDP Risks and Concerns Identification and Assessment

SDP Plans for Software Engineering Facilities and Support Tools

Subtasks con't

Software Development Plan (SDP) Preparation Task

- SDP Software Quality Assurance Plan
- SDP Software Configuration Management Plan
- SDP Test Plans
- SDP Statement of Work Documentation
- SDP Coordination
- SDP Release Planning Audit Trail Documentation
- SDP Approval

SDP Preparation Task

SDP Project Overview Completion Subtask (1 of 19)

- Identify and record:
    - The purpose of the release
    - The scope of the release
    - The goals and objectives of the release

SDP Preparation Task

SDP Organization and Responsibility Objectives Identification

Subtask (2 of 19)

- Identify:
    - Approval authority for SDP
    - Project manager
    - Any external org. with interest in release
    - Project personnel
    - Interfacing groups

SDP Preparation Task

SDP Software Life Cycle Selection Subtask (3 of 19)

- Select the system scenario appropriate for the type of work being accomplished

SDP Preparation Task

SDP Procedures, Methods and Standards Identification

Subtask (4 of 19)

- Identify:
    - Management and technical controls
    - Methodologies, models and tools
    - Verification and validation procedures
    - Tracking and oversight

SDP Preparation Task

SDP Release Estimates Recording Subtask (5 of 19)

- Consolidate and record:
  - Size estimates
  - Effort estimates
  - Critical computer resources estimates
  - Firm Fixed Prices

SDP Preparation Task

SDP Software Products to be Delivered Identification Subtask (6 of 19)

- Consolidate and record
  - The lists of affected Configuration Items
  - Other software products for all SCRs in the release

SDP Preparation Task

SDP Items Required from the Customer Identification Subtask (7 of 19)

- Consolidate and record:
  - All the items that the customer is still required to provide to complete the release

SDP Preparation Task

SDP Items Required from External Organizations Identification Subtask (8 of 19)

- Consolidate and record:
  - All the items that are required from groups outside the FSA (except the customer) to complete the release

SDP Preparation Task

SDP Ancillary Requirements Identification
Subtask (9 of 19)

- Consolidate and record:
  - Ancillary requirements from each SCR in the release

SDP Preparation Task

SDP Release Scheduling Subtask (10 of 19)

- Identify, consolidate, and record WBS
- Assign or compute duration for each task
- Document assumptions in scheduling process
- Identify date dependencies between tasks
- Assign all tasks to specific personnel
- Document the consolidated schedule

SDP Preparation Task

SDP Risks and Concerns Identification and Assessment Subtask (11 of 19)

- Consolidate and record:
  - The risk assessments from the proposed release review

SDP Preparation Task

SDP Plans for Software Engineering Facilities and Support Tools Subtask (12 of 19)

- Identify software engineering facilities and support tools required for the release

- Refer to CCR Evaluation and CCR Availability Tasks

- Arrange with external activities to fulfill needs

- Document the plans

SDP Preparation Task

SDP Software Quality Assurance Plan Subtask (13 of 19)

- Attach or refer to the Software Quality Assurance Plan for this release

SDP Preparation Task

SDP Software Configuration Management Plan Subtask (14 of 19)

- Attach or refer to the Software Configuration Management Plan for this release

SDP Preparation Task

SDP Test Plans
Subtask (15 of 19)

- Attach or refer to the test plans for this release

SDP Preparation Task

SDP Statement of Work Documentation Subtask (16 of 19)

- Attach statement of work documents relating to any subcontracted work

SDP Preparation Task

SDP Coordination Subtask (17 of 19)

- Coordinate completed SDP with all affected groups and individuals

SDP Preparation Task

SDP Release Planning Audit Trail Documentation
Subtask (18 of 19)

- Archive all documents used in the preparation of the SDP

SDP Preparation Task

SDP Approval
Subtask (19 of 19)

- Submit the finalized SDP for approval

Performance Check

**Open the Performance Check Package to
SDP Modification Task
and follow the directions.**

SECTION 4

Project Tracking and Oversight

Project Management Introduction

Goals for Software Project Tracking and Oversight (SPTO)

- PM:
    - Tracks actuals vs. estimates recorded in SDP
    - Takes corrective action
    - Manages to closure
    - Gets agreement and commitment on changes to plans from all affected groups and individuals

Project Management Introduction

COMMITMENT TO PERFORM (SPTO):

- Project software manager is designated to be responsible for:

    - Negotiating commitments

    - Developing the project's SDP

    - Defining the project's software activities

- PM follows a written organizational policy for planning and managing a software project

Project Management Introduction

ABILITY TO PERFORM (SPTO):

- SDP is documented and approved
- Responsibilities for developing work products and performing SQA activities are assigned
- Adequate resources and funding are provided
- Managers are trained in managing the technical and personnel aspects of the s/w project.
- Software managers receive orientation in the technical aspects of the software project

Project Management Introduction

MEASUREMENT AND ANALYSIS (SPTO):

- Determine the status of:
    - Software planning
    - Tracking
    - Oversight activities

Project Management Introduction

VERIFYING IMPLEMENTATION (SPTO):

- PM reviews the activities for SPTO with:
  - Senior management (periodic basis)
  - All affected groups (periodic and event-driven basis)
- SQA reviews and/or audits (per SQAP):
  - Activities
  - Work products

References/Standards:

Input (s):

Deliverable Review Proceedings

Periodic Review Proceedings

Software Development Plan

Output (s):

Amended Software Development Plan

Deliverable Review Proceedings

Periodic Review Proceedings

Release Metrics Data

Tracking and Oversight Task

PURPOSE: To perform ongoing tracking and oversight functions in order to keep management informed as to progress of the release

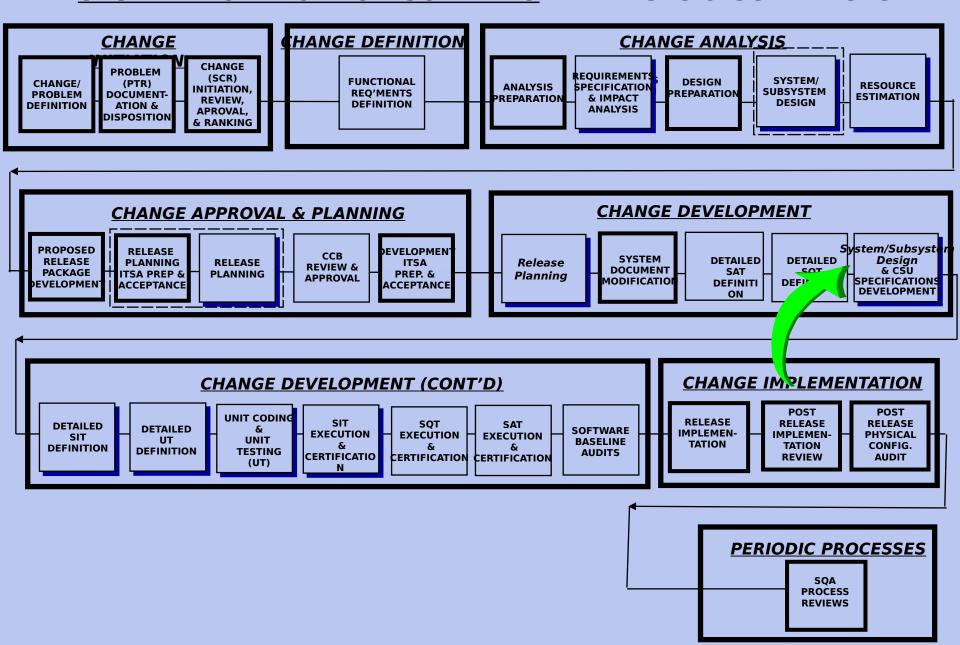### Skill(s):

Computer Expertise

Project Management

SOFTWARE PROCESS ARCHITECTURE
SYSTEM MODIFICATION SCENARIO - PHASES & SUBPHASES

CHANGE INITIATION

CHANGE/ PROBLEM DEFINITION	PROBLEM (PTR) DOCUMENT-ATION & DISPOSITION	CHANGE (SCR) INITIATION, REVIEW, APROVAL, & RANKING

CHANGE DEFINITION

FUNCTIONAL REQ'MENTS DEFINITION

CHANGE ANALYSIS

ANALYSIS PREPARATION	REQUIREMENTS SPECIFICATION & IMPACT ANALYSIS	DESIGN PREPARATION	SYSTEM/ SUBSYSTEM DESIGN	RESOURCE ESTIMATION

CHANGE APPROVAL & PLANNING

PROPOSED RELEASE PACKAGE DEVELOPMENT	RELEASE PLANNING ITSA PREP & ACCEPTANCE	RELEASE PLANNING	CCB REVIEW & APPROVAL	DEVELOPMENT ITSA PREP. & ACCEPTANCE

CHANGE DEVELOPMENT

Release Planning	SYSTEM DOCUMENT MODIFICATION	DETAILED SAT DEFINITION	DETAILED SQT DEFIN	System/Subsystem Design & CSU SPECIFICATIONS DEVELOPMENT

CHANGE DEVELOPMENT (CONT'D)

DETAILED SIT DEFINITION	DETAILED UT DEFINITION	UNIT CODING & UNIT TESTING (UT)	SIT EXECUTION & CERTIFICATION	SQT EXECUTION & CERTIFICATION	SAT EXECUTION & CERTIFICATION	SOFTWARE BASELINE AUDITS

CHANGE IMPLEMENTATION

RELEASE IMPLEMEN-TATION	POST RELEASE IMPLEMEN-TATION REVIEW	POST RELEASE PHYSICAL CONFIG. AUDIT

PERIODIC PROCESSES

SQA PROCESS REVIEWS

2 TASKS

CHANGE DEVELOPMENT PHASE

System/Subsystem

Design & CSU

Specifications

Development

Subphase

Detailed Design & CSU Specs Tracking and Oversight

Impact Analysis Review

Input (s):

FSA-Impacted SCR →

Output (s):

FSA-Impacted SCR →

Impact Analysis Review Task (1 of 2)
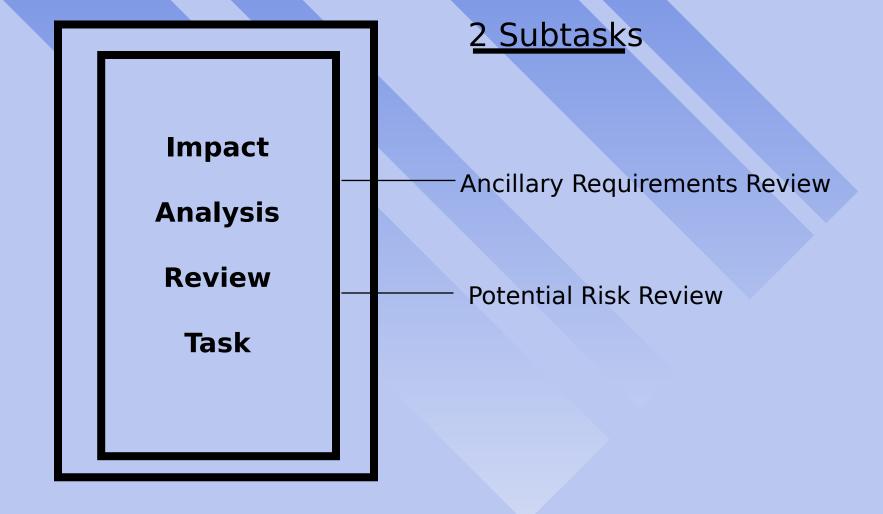
Purpose: To review the impact analysis to determine its completeness, correctness and currency

Skill(s) :

**Development
Subject Matter Manager (SMM) Expertise
Subject Matter Expertise
Systems Design
Testing**

2 Subtasks

Impact

Analysis

Review

Task

Ancillary Requirements Review

Potential Risk Review

Impact Analysis Review Task

Ancillary Requirements Review Subtask (1 of 2)

- Review the ancillary requirements associated with a change request

Impact Analysis Review Task

Potential Risk Review Subtask (2 of 2)

- Review the potential risks associated with the system change request

Tracking and Oversight Task

WHAT IS TRACKING AND OVERSIGHT?

- Review project plan
- Adjust plans as necessary
- Report status

SOFTWARE PROCESS ARCHITECTURE
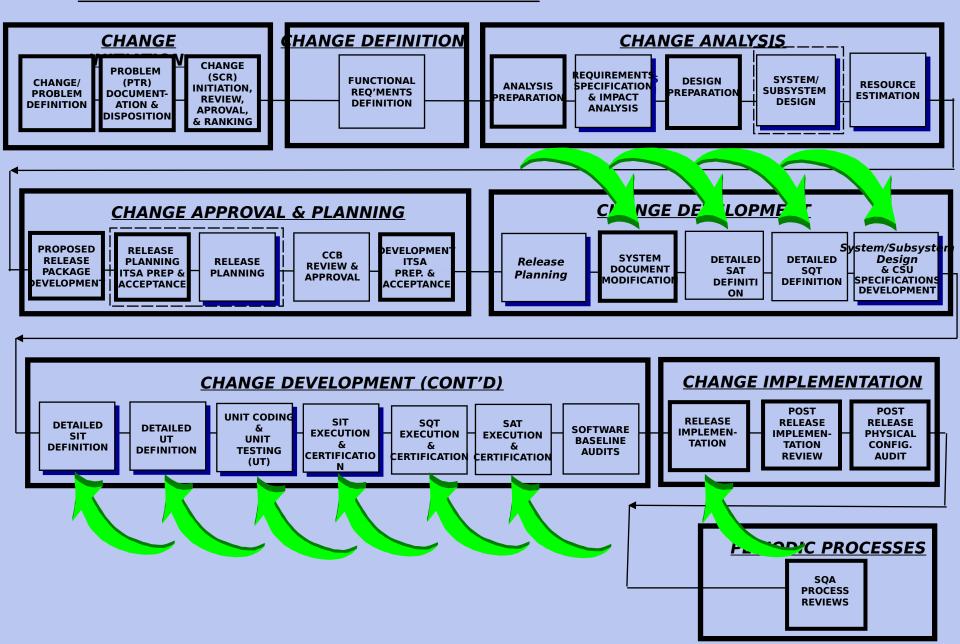## SYSTEM MODIFICATION SCENARIO - PHASES & SUBPHASES

CHANGE INITIATION
- CHANGE/ PROBLEM DEFINITION
- PROBLEM (PTR) DOCUMENT-ATION & DISPOSITION
- CHANGE (SCR) INITIATION, REVIEW, APROVAL, & RANKING

CHANGE DEFINITION
- FUNCTIONAL REQ'MENTS DEFINITION

CHANGE ANALYSIS
- ANALYSIS PREPARATION
- REQUIREMENTS SPECIFICATION & IMPACT ANALYSIS
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- PROPOSED RELEASE PACKAGE DEVELOPMENT
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- RELEASE PLANNING
- CCB REVIEW & APPROVAL
- DEVELOPMENT ITSA PREP. & ACCEPTANCE

CHANGE DEVELOPMENT
- *Release Planning*
- SYSTEM DOCUMENT MODIFICATION
- DETAILED SAT DEFINITION
- DETAILED SQT DEFINITION
- *System/Subsystem Design* & CSU SPECIFICATIONS DEVELOPMENT

CHANGE DEVELOPMENT (CONT'D)
- DETAILED SIT DEFINITION
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- UNIT CODING & UNIT TESTING (UT)
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- SAT EXECUTION & CERTIFICATION
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CHANGE IMPLEMENTATION
- RELEASE IMPLEMEN-TATION
- POST RELEASE IMPLEMEN-TATION REVIEW
- POST RELEASE PHYSICAL CONFIG. AUDIT

PERIODIC PROCESSES
- SQA PROCESS REVIEWS

References/Standards:

Input (s):

Output (s):

Deliverable Review Proceedings

Periodic Review Proceedings

Software Development Plan

Tracking and Oversight Task

PURPOSE: To perform ongoing tracking and oversight functions in order to keep management informed as to progress of and changes to the release
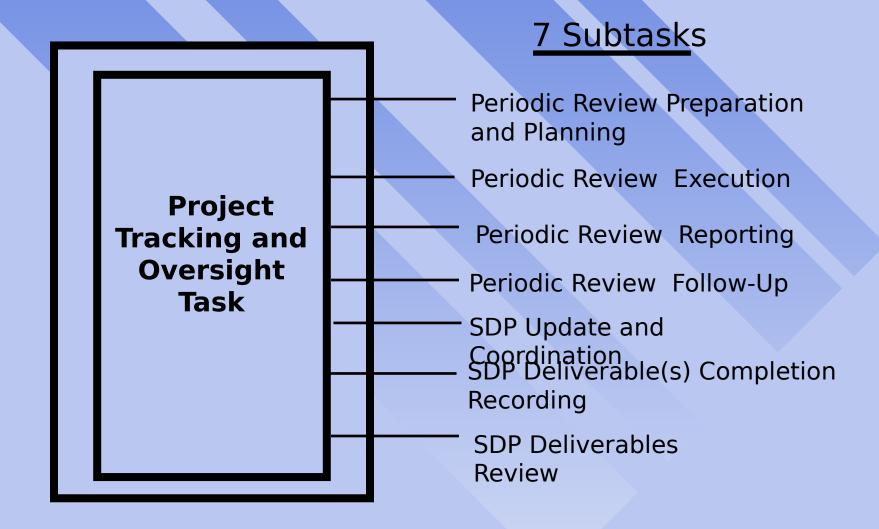
Amended Software Development Plan

Deliverable Review Proceedings

Periodic Review Proceedings

Release Metrics Data

Skill(s):

Computer Expertise

Project Management

7 Subtasks

Project Tracking and Oversight Task

- Periodic Review Preparation and Planning
- Periodic Review Execution
- Periodic Review Reporting
- Periodic Review Follow-Up
- SDP Update and Coordination
- SDP Deliverable(s) Completion Recording
- SDP Deliverables Review

Tracking and Oversight Task

Periodic Review Preparation and Planning Subtask (1 of 7)

- Collect, compare and roll up Configuration Item Status data

- Analyze deviations between actual and estimated data

- Notify management

Tracking and Oversight Task

Periodic Review Execution
Subtask (2 of 7)

- Develop corrective actions for deviations including:
    - Changing the schedule
    - Changing resources
    - Changing scope
    - Lowering the quality (not recommended)
- Develop course of action for completing
   proposed corrective actions

Tracking and Oversight Task

Periodic Review Reporting Subtask (3 of 7)

- Record the results of the Periodic Review including:
  - Minutes of the meeting
  - Action items identified during the meeting

Tracking and Oversight Task

Periodic Review Follow-Up Subtask (4 of 7)

- Determine status of each tasking or action item that was previously identified and   recorded during the review session

Tracking and Oversight Task

SDP Update and Coordination Subtask (5 of 7)

- Identify and coordinate changes to the SDP
- Obtain approval of proposed SDP amendments
- Implement approved amendments in the SDP
- Publish amended SDP

Tracking and Oversight Task

SDP Deliverables Completion Recording Subtask (6 of 7)

- Identify completed deliverables
- Collect and record completion data
- Report completion of deliverables to management

Tracking and Oversight Task

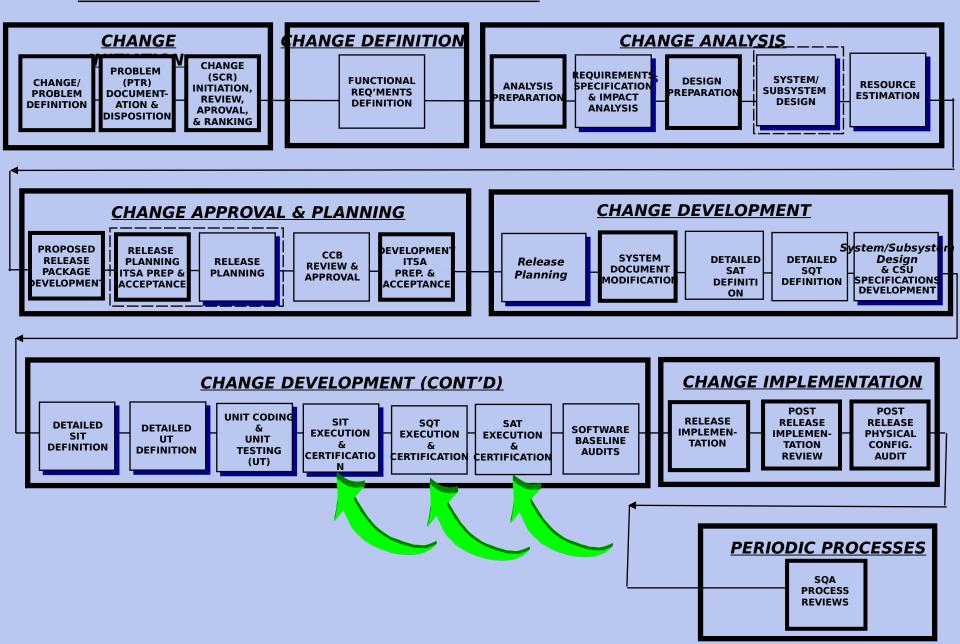## SDP Deliverables Review
Subtask (7 of 7)

- Prepare and plan customer meeting

- Meet with the customer

- Record results of the customer meeting

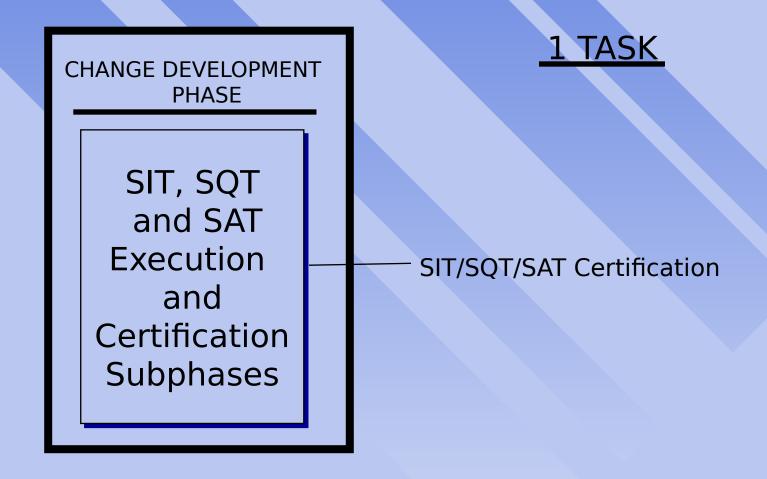- Follow up on tasking from customer meeting

Performance Check

**Open the Performance Check Package to
Tracking and Oversight Task
and answer the questions.**

SOFTWARE PROCESS ARCHITECTURE
SYSTEM MODIFICATION SCENARIO - PHASES & SUBPHASES

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PERIODIC PROCESSES

SQA PROCESS REVIEWS

Certification Task

CHANGE DEVELOPMENT PHASE

SIT, SQT and SAT Execution and Certification Subphases —— SIT/SQT/SAT Certification

1 TASK

SIT/SQT/SAT Certification Task

Input (s):

Test Analysis Report

Test Discrepancy
Report (TDR)

Test Results

Purposes:

SIT - To ensure that all various requirements up
to this point have been met

SQT - To validate that the system has met the
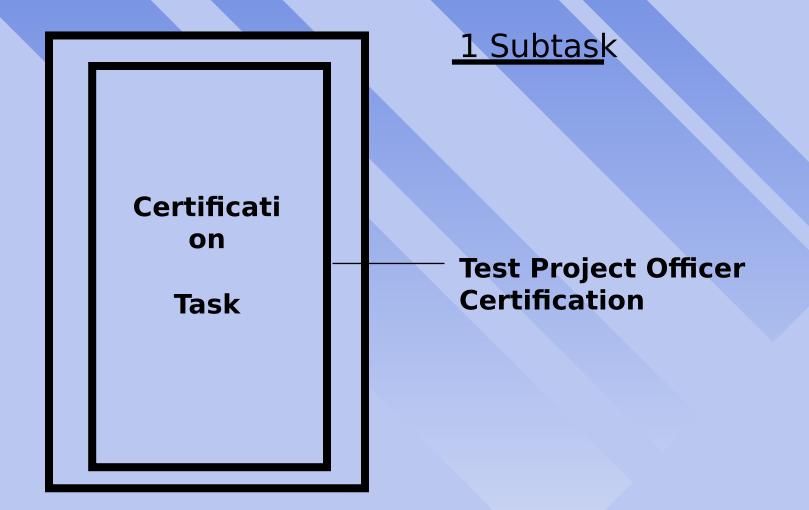requirements of the SQT, completed quality
assurance reviews and audits and that
release management is ready to pass to
the acceptance phase

Output (s):

CMIS Certification Entry

SAT - The final check before release to the field   for implementation

Skill(s):

Project Management

1 Subtask

Certificati on

Task

Test Project Officer Certification

Certification Task

Test Project Officer Certification Subtask (1 of 1)

- Test project officer must certify test results prior to subsequent testing phases beginning or proceeding to implementation
- Test project officer receives the test certification and quality assurance certification and then makes the final determination for this subphase

CONGRATULATIONS

YOU HAVE

SUCCESSFULLY COMPLETED THE

PROJECT MANAGEMENT COURSE